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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,324	10/27/2003	Brian L. Ganz		4867

7590

10/19/2006

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EXAMINER

SETH, MANAV

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/695,324	Applicant(s) GANZ ET AL.	
	Examiner Manav Seth	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 19, 2005 has been entered.

Response to Amendment

2. Applicant's amendment filed on December 19, 2005 has been considered and entered in full.
3. Applicant's arguments with respect to amended claims have been considered but are moot in view of the new ground(s) of rejection(s) made below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the

subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 9-11, 14, 15, 19-21, 25-27, 33-35 and 42-43 are rejected under 35 U.S.C. 103(a) as being anticipated under Reich et al. (hereinafter Reich), U.S. Patent No. 4,199,013 and further in view of Stylli et al., U.S. Patent No. 5,985,214.

Regarding Claim 1, Reich discloses an automated storage and retrieval device for trays holding subject matter, comprising:

A) a storage rack comprising a plurality of vertically aligned storage slots for vertically storing a plurality of trays (Figure 4, stored Cassettes 12 containing Tubes 10 and Specimen Cups 11, which are stored on stage 13; Column 2, Lines 67-68, Column 3, Lines 1-4). Reich shows only horizontal storage of each tray and does not show a storage rack which comprises a plurality of vertically aligned storage slots for vertically storing a plurality of trays.

B) at least one automated machine (Figure 3, Bracket Assembly 33 and related accessories; Column 3, Lines 22-41) and also making the whole machine combined with the gantry as a automated machine,

C) a storage gantry for vertical and horizontal movement of said plurality of trays between said storage rack, and said at least one automated machine. Reich shows a horizontal platform (stage 13) on which trays are stored on horizontal platform and a conveying system 20 (gantry) that moves the trays in a horizontal movement (Figure 4, Stage 13, Track 20, movements in x directions 25 and 26, and y directions 23 and 24; Column 3, Lines 5-21),

D) at least one computer system programmed to control said storage gantry (Figure 3, Program Panel 160; Figure 14, Curve A; Column 10, Lines 13-18, Column 10, Lines 32-35) .

Reich does not teach a storage rack which comprises a plurality of vertically aligned storage slots for **vertically storing** a plurality of trays and further does not teach a storage gantry for **vertical and horizontal movement of said plurality of trays** between said storage rack and said at least one automated machine, where said storage gantry being adopted to remove a tray from any one of said plurality of vertically aligned storage slots and to return a tray to any one of said plurality of vertically aligned storage slots. Gantry as well known is used to move physical objects from one place to another under the control of a automation and the same is done by the conveyor of Reich. Examiner agrees to applicant's argument's, as recited in 2nd paragraph of page 13 of amendment filed on May 31, 2005, that Reich discloses a horizontal storage which is not nearly as effective as vertical storage when storing a large plurality of trays and the amount of horizontal space is quickly depleted when items are not stored vertically but are placed on a horizontal platform and also, further Reich's invention would require a person/technician to load the horizontal space (conveyor) manually with said plurality of trays. Therefore, keeping in view all the problems discussed before, examiner cites Stylli. Stylli discloses a storage rack comprising a plurality of vertically aligned storage slots for vertically storing a plurality of trays (figures 3, 4 and 5; col. 10, lines 12-68; col. 11, lines 1-15, lines 60-68; col. 12, lines 35-60; col. 19, lines 20-65). Stylli further discloses a storage gantry for vertical and **horizontal movement of said plurality of trays** between said storage rack and said at least one automated machine, where said storage gantry being adopted to remove a tray from any one of said plurality of vertically aligned storage slots and to return a tray to any one of said plurality of vertically aligned storage slots (col. 10, lines 25-68 through col. 11, lines 1-20; col. 11, lines 60-68; col. 19, lines

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20-65; automated storage gantry - chemical well retriever (robotic means) for retrieving and storing the plates selectively at the addressable locations) and Stylli further discloses the placement of these plates on a conveyor to send it to at least one automated machine (figures 4 and 5; col. 17, lines 20-35). Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made to modify Reich's invention in view of Stylli because Stylli clearly discloses a system which recites same components as Reich which is used in aspiration, the only difference between Reich and Stylli is that rather than storing trays on horizontal plane, Stylli's invention provides additional step of storing trays in vertical storage rack thus saving the space as discussed above and Stylli further provides the additional feature where the trays under the program control automatically are transferred between the storage rack and automated machine (aspiration station) with minimum technician interaction at significantly spaced times, and further providing vertical and horizontal movement of trays while retrieving the trays (or plates) from the vertical storage.

Regarding Claim 2, Reich further discloses the automated storage and retrieval device as in Claim 1 further comprising an access device, wherein said storage gantry moves said plurality of trays between said storage rack and said access device (Figures 2, 3 and 14; Column 3, Lines 5-21; Column 10, Lines 13-35) and also see Stylli in the disclosure cited in the rejection of claim 1.

Regarding Claim 3, Reich further discloses the automated storage and retrieval device as in Claim 1, wherein said at least one automated machine is an inspection device (Column 1, Lines 49-53; Column 2, Lines 44-66) and also see Stylli which deal with chemical inspection (See Stylli, col. 18, lines 60-68).

Regarding Claim 9, Reich further discloses the automated storage and retrieval device as in Claim 1, wherein said at least one automated machine is an automated micro-well plate filling machine (Figure 4, Cassettes 12 containing Tubes 10 and Specimen Cups 11; Column 1, Lines 7-14; Column 2, Lines 30-43) and also see Stylli which provides the same function as by Reich.

Regarding Claim 10, Reich further discloses the automated storage and retrieval device as in Claim 1, wherein said at east one automated machine comprises:

E) a micro-well plate filling assembly, comprising:

1. an indexing device (Figures 3, 4 and 14; Column 3, Lines 5-21; Column 10, Lines 13-54), and
2. a fill mechanism in communication with a media source and positioned to insert portions of said media into the empty micro-well plates (Figures 3-5; Column 2, Lines 67-68, Column 3, Lines 1-52), and

F) an automatic control unit programmed to cause said indexing device to move empty micro-well plates adjacent to said fill mechanism, and to cause said fill mechanism to inject media from said media source into wells in the micro-well plates (Figure 3, Program Panel 160; Figure 14, Curve A; Column 10, Lines 13-18, Column 10, Lines 32-35).

Regarding Claim 11, Reich further discloses the automated storage and retrieval device as in Claim 1, wherein said subject matter is solution inside at least one micro-well plate (Column 2, Lines 44-50; Column 12, Lines 37-52).

With regards to Claims 14 and 25, arguments analogous to those presented for Claim 1 are applicable to Claims 14 and 25.

With regards to Claims 15 and 26, arguments analogous to those presented for Claim 2 are applicable to Claims 15 and 26.

With regards to Claim 27, arguments analogous to those presented for Claim 3 are applicable to Claim 27.

With regards to Claims 19 and 33, arguments analogous to those presented for Claim 9 are applicable to Claims 19 and 33.

With regards to Claims 20 and 34, arguments analogous to those presented for Claim 10 are applicable to Claims 20 and 34.

With regards to Claims 21 and 35, arguments analogous to those presented for Claim 11 are applicable to Claims 21 and 35.

Claims 42 and 43 have been similarly analyzed and rejected as per claim 1 since Stylli as cited in the rejection of claim 1, teaching storing and retrieving the plates and wells from the plates selectively between the storage rack and automated machine (computer workstation).

6. Claims 4, 12, 13, 16, 22, 23, 28, 36 and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reich et al. (hereinafter Reich), U.S. Patent No. 4,199,013 and further in view of Stylli et al., U.S. Patent No. 5,985,214 and further in view of Rubin et al. (hereinafter Rubin), (Minimal Intervention Robotic Protein Crystallization).

Regarding Claim 4, Reich further discloses the automated storage and retrieval device as in Claim 3, wherein said inspection device is a device for inspecting and classifying a plurality of samples for microchemical assays including separation of liquid and solid phases of the samples (Column 1, Lines 49-53; Column 2, Lines 44-66).

Reich and Stylli do not explicitly disclose inspecting and classifying a plurality of microscopic crystals.

Rubin discloses a protein crystallization robotic system for inspecting and classifying a plurality of microscopic crystals (Figures 2, 4 and 5; Pages 158-160, Section 3).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify, modified invention of Reich in view of Stylli as of claim 1, in accordance with the teachings of Rubin to inspect and classify a plurality of microscopic crystals because it will expand the versatility of Reich's teachings of separating liquid and solid phases of the samples to include inspecting, handling, filling and classifying microscopic crystals.

With regards to Claim 16, arguments analogous to those presented for Claims 3 and 4 are applicable to Claim 16.

With regards to Claim 28, arguments analogous to those presented for Claim 4 are applicable to Claim 28.

Regarding Claim 12, Rubin discloses the automated storage and retrieval device as in Claim 11, wherein said at least one micro-well plate comprises a bar code, wherein said automated storage and retrieval device further comprises at least one bar code reader in communication with said at least one computer system (Page 159, Column 1). Also see Stylli (col. 10, lines 20-22; col. 12, lines 35-50).

Regarding Claim 13, Reich discloses the automated storage and retrieval device as in Claim 1, wherein said plurality of trays holds at least one micro-well plate, wherein said storage gantry comprises at least one gripper, wherein said plurality of trays comprises:

- E) at least one cut-down access area for said at least one gripper ,
- F) a corner flat for tray orientation (Figure 4), and
- G) a plurality of tapered guide pillars for guiding said at least one micro-well plate into said plurality of trays (Figures 1-4; Column 2, Lines 30-43).

Reich does not disclose a robotic gripper.

Utilizing a robotic gripper is well known in liquid sample delivering and handling systems as taught by Rubin (Figure 2).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Reich's invention in accordance with the teachings of Rubin to include a robotic gripper in the automated storage and retrieval device because it is a well known accessory routinely implemented for handling components intended to be inspected or classified. Also see Stylli (col. 10, lines 44-55).

With regards to Claims 22 and 36, arguments analogous to those presented for Claim 12 are applicable to Claims 22 and 36.

With regards to Claims 38-40, arguments analogous to those presented for Claims 1-4 are applicable to Claims 38-40.

With regards to Claims 23 and 37, arguments analogous to those presented for Claim 13 are applicable to Claims 23 and 37.

7. Claims 7 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reich et al., (hereinafter Reich), U.S. Patent No. 4,199,013 and further in view of Stylli et al., U.S. Patent No. 5,985,214, and further in view of Jurisica et al., (hereinafter Jurisica), (Intelligent Decision Support for Protein Crystal Growth).

Regarding claim 7, arguments analogous to those presented for Claims 1 and 10 are applicable to Claim 7. Reich further discloses a computerized program comprising:

F) an indexing device for receiving said plurality of trays and for placing said subject matter in a specified position for digital signal processing (Figures 3-5; Column 2, Lines 67-68, Column 3, Lines 1-52), and

G) at least one control computer programmed to control said indexing device (Program panel 160; Figure 14, Curve A; Column 10, Lines 13-18, Column 10, Lines 32-35), wherein said at least one control computer is programmed to receive digital signals from movement of said subject matter (Column 9, Lines 28-43).

However, Reich and Stylli does not disclose the inspection device comprises:

at least one camera, and the control computer programmed to receive images of the subject matter.

Jurisica discloses protein crystal growth system comprising:

E) at least one camera (Page 396, Column 2, second paragraph),

F) an indexing device for receiving said plurality of trays and for placing said subject matter in camera view of said at least one camera (Page 396, Column 2, second paragraph), and

G) at least one control computer programmed to control said indexing device and said at least one camera, wherein said at least one control computer is programmed to receive from said at least one camera images of said subject matter (Figures 1 and 3-5; Page 398, Column 2 through Page 402, Column 1).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify combined Reich's and Stylli's invention in accordance with the teachings of Jurisica to acquire images of the subject matter because it will provide supplementary information of the subject matter for further enhancing the operation of the automated storage and retrieval system.

With regards to Claim 31, arguments analogous to those presented for Claim 7 are applicable to Claim 31.

8. Claims 5, 6, 8, 17, 18, 24, 29, 30 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reich et al., (hereinafter Reich), U.S. Patent No. 4,199,013 and further in view of Stylli et al., U.S. Patent No. 5,985,214, and further in view of Rubin et al. (hereinafter Rubin), (Minimal Intervention Robotic Protein Crystallization) and further in view of Jurisica et al., (hereinafter Jurisica), (Intelligent Decision Support for Protein Crystal Growth).

With regards to claim 5, arguments analogous to those presented for Claims 1-4 and 7 are applicable to Claim 5.

Regarding Claim 6, Jurisica further disclose the automated storage and retrieval device as in Claim 5, wherein said at least one control computer automatically classifies said plurality of microscopic crystals after receiving said images (Page 402).

Regarding Claim 8, it is a well-known methodology to utilize LED light source for illuminating said subject matter (Official Notice Taken). In the previous office action examiner took official notice on the subject matter recited in claim 8 and applicant does not provide any arguments to traverse the official notice taken, therefore the subject matter recited in claim 8 is taken to be admitted prior art (see MPEP 2144.04, section C, page 2100-144).

With regards to Claim 17, arguments analogous to those presented for Claims 5 and 6 are applicable to Claim 17.

With regards to Claims 24 and 29, arguments analogous to those presented for Claim 5 are applicable to Claims 24 and 29.

With regards to Claims 18 and 30, arguments analogous to those presented for Claim 6 are applicable to Claims 18 and 30.

With regards to Claim 32, arguments analogous to those presented for Claim 8 are applicable to Claim 32.

With regards to Claim 41, arguments analogous to those presented for Claim 5 are applicable to Claim 41.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 14, 25 and 40 rejected under 35 U.S.C. 102(b) as being anticipated by Stylli et al., U.S. Patent No. 5,985,214.

Regarding Claim 1, Stylli discloses an automated storage and retrieval device for trays holding subject matter, comprising:

A) a storage rack comprising a plurality of vertically aligned storage slots for vertically storing a plurality of trays (figures 3, 4 and 5; col. 10, lines 12-68; col. 11, lines 1-15, lines 60-68; col. 12, lines 35-60; col. 19, lines 20-65).

B) at least one automated machine (figures 4 and 5; col. 17, lines 20-35),

C) a storage gantry for vertical and **horizontal movement of said plurality of trays** between said storage rack and said at least one automated machine, where said storage gantry being adopted to remove a tray from any one of said plurality of vertically aligned storage slots and to return a tray to any one of said plurality of vertically aligned storage slots (col. 10, lines 25-68 through col. 11, lines 1-20; col. 11, lines 60-68; col. 19, lines 20-65; automated storage gantry - chemical well retriever (robotic means) for retrieving and storing the plates selectively at the addressable locations) and Stylli further discloses the placement of these plates on a conveyor to send it to at least one automated machine (figures 4 and 5; col. 17, lines 20-35),

D) at least one computer system programmed to control said storage gantry (Column 10, Lines 25-30) .

Claims 14, 25 and 40 have been similarly analyzed and rejected as per claim 1.

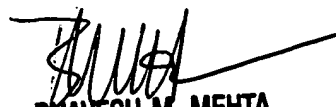
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manav Seth
Art Unit 2624
October 15, 2006


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